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# ALASKA AGRICULTURAL POSSIBILITIES*

BY

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While en route to Alaska last summer, on the steamer Northwestern, the wireless telegraph operator added to the pleasure of the trip by issuing daily a little type-written bulletin containing Associated Press despatches and aboard-ship news. By way of diversion, some imaginative person on board would prepare for the daily *Aerogram* items of purported information as to the personality and business of certain passengers.

It being known by some on board that I was on my way to Alaska to study the agricultural characteristics and possibilities of the territory, I was regarded as a legitimate target for some of the good-natured fun shafts; and so in one issue of the *Aerogram* it was solemnly stated that my mission to Alaska was to establish government farms on which to grow bananas for brown bears.

But the joke was not all a joke, for it illustrated two facts. One is that it was fairly indicative of the prevalent knowledge regarding Alaska agricultural possibilities, and the other, that as yet Alaska farming is, in the public mind, more a matter of joke than for serious consideration.

How derisively did the American public receive the purchase by the United States of Alaska from Russia in 1867, and forthwith the territory was dubbed "Seward's Folly" and "Seward's Ice-box," in criticism of Secretary of State Seward's statesmanship in buying for $7,200,000 what was thought to be a worthless, uninhabitable region of perpetual ice and snow.

But we have become much better informed, in some respects, regarding this area of nearly 600,000 square miles; and, for the most part, the citizens of the United States are now convinced that, from a monetary point of view, the purchase of Alaska was a very profitable real estate deal. Official reports tell us that during the last 30 years the value of Alaska products total $335,000,000; that since 1880 there have been added $142,000,000 to the world's supply of gold and the annual output is now about $20,000,000 from that source, and that the value of Alaska fisheries products is more than $10,000,000 annually. And recent investigations by the Bureau of Geology are revealing fabulous wealth in coal, copper and other minerals. In one copper mine, the famous Bonanza mine, there is said to be $20,000,000 worth of high grade ore in sight, and numerous other rich prospects in the same field. Coal has been found in large quantities and in many districts. In only two fields, the Bering River and Matanuska, both near the south coast, it is asserted that, so far as examined, there is more than one and a half times as much high grade coal as has thus far been mined in Pennsylvania.

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* By the courtesy of The Colorado Scientific Society, reprinted from its *Proceedings* (Vol. ix, 1910, pp. 387-402).

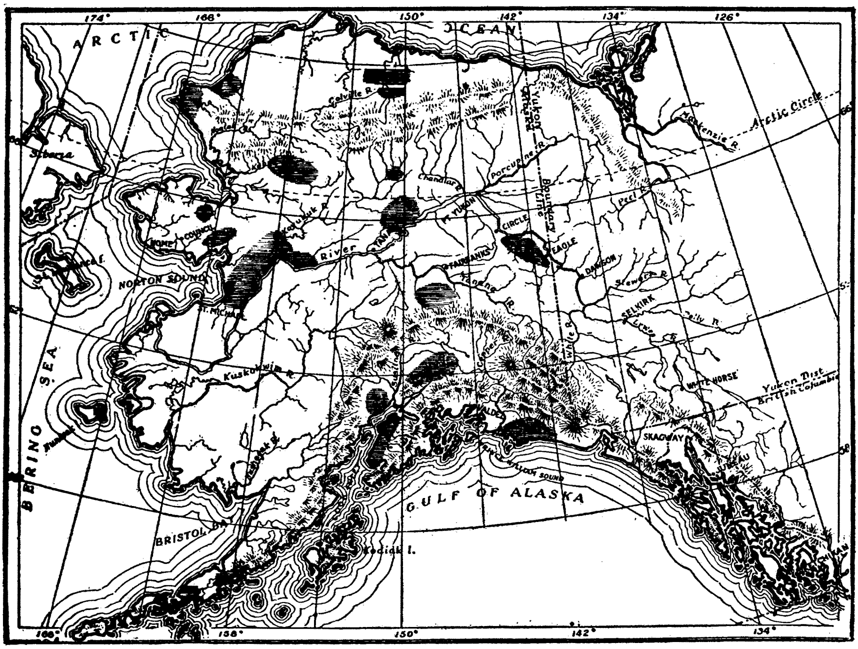

FIG. 1—Shaded Areas indicate the Coal Deposits of Alaska.

"Yes, but farming is a different proposition; it must have suitable soil and climate, and these can't be found in an Arctic mountain region of ice and snow. It is foolish to talk about farming in Alaska, or are you just joking?"

Says the average American:

"Do not hundreds of our people visit Alaska every summer, and tell us and show us pictures of the vast snow-covered mountain ranges, and glaciers that come down to the sea, and the icebergs that often imperil the ships? These things they have seen with their own eyes, and therefore know that farming in Alaska is out of the question."

And looking at the matter from the view point of the average Alaska tourist, there surely are very meager agricultural opportunities in sight.

Let us take the usual Alaska tourist trip, and a delightful one it is, too, of a thousand miles via the Inside Passage from Seattle to Skagway, the terminus of the White Pass Railroad.

After passing out of Puget Sound and crossing the Straits of Juan de Fuca, our steamer will follow the channel between Vancouver and Queen Charlotte Islands and the mainland, and the labyrinthian passage of the Alexander Archipelago, which has been denominated the "Grand Canyon of the Pacific." And very canyon-like it is much of the way, for the passage, in reality, is through the coast range of mountains which here has its very feet in the Pacific. Day after day the steamer winds its way through the channels and fiords, sometimes so narrow as to seem scarcely to afford room for the ship to pass, shut in by the precipitous slopes of mountains on either hand, fir-clad to the water's edge, and always with snow, even in mid-summer, in sight, and this often apparently within a stone's throw of the ship. When the channel widens and distant views are had, they are of snow-clad mountain scenes, with peaks reaching 10,000 feet and more above sea-level. No level shore or back country areas suitable in topography for agriculture are seen, even if those snow fields were not so ominously near at hand. As we proceed northward and see plainly that the snow areas are increasing in size, we are not surprised, for are we not traveling toward the Arctic regions?

When we have passed from British waters and reached the southern point of Alaska, at latitude 50° 40′, we are 1,000 miles north of the parallel of Denver, Colorado; St. Joseph, Mo.; Springfield, Ill., and Philadelphia, nearly 400 miles north of Quebec, Canada, and within about 800 miles of the Arctic Circle. Juneau is still 200 miles to the north of us, but we can see, mentally and physically, that we are getting into "Seward's Ice-box," and, consequently, we begin to feel its chill.

If our steamer is an excursion boat, the captain will probably swing out of the regular course and soon the word glacier! runs tingling through the ship, and all on board are gazing intently at what has always been in our minds the dominant Alaska fact.

As we approach Juneau the glaciers increase in extent and frequency. If the excursion continues westward along the south coast, on leaving Juneau we pass into Icy Strait, a suggestively cold but fitting nomenclature, for here we will probably see icebergs floating out of Glacier Bay from Muir, John Hopkins, and Brady Glaciers, all forming one of the largest glacier fields in the world, mothered by Mount Fairweather, rising 15,363 feet above the sea.

It was in Icy Strait that the steamship Yucatan, of the Alaska Steamship Company line, was wrecked recently by striking an iceberg.

Passing out of Icy Strait through Cross Sound into the open sea, we follow the shore line westward a thousand miles to Seward, with snow-covered mountains and glaciers almost continually in sight.

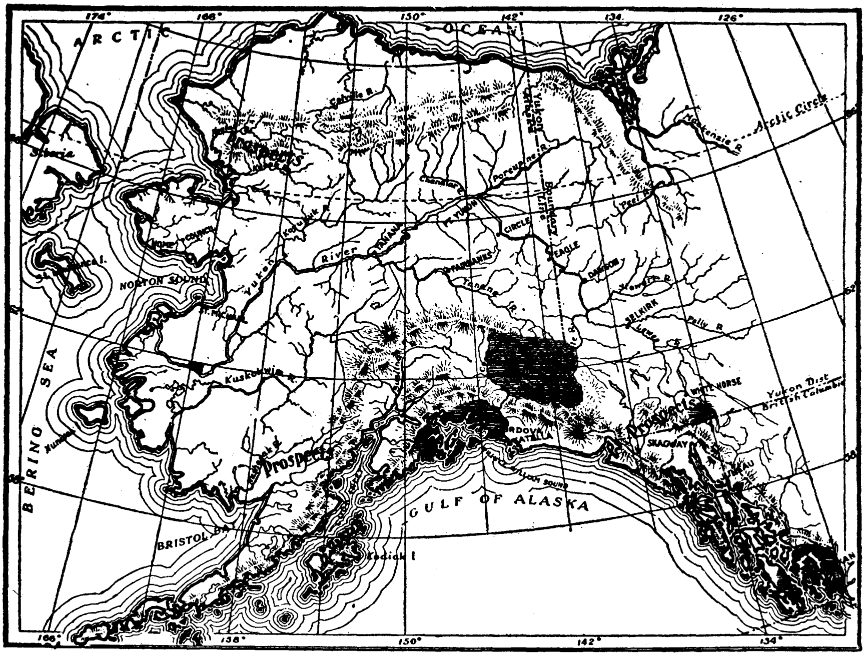

Fig. 2—Shaded Areas indicate the Copper Regions of Alaska.

About half way between Juneau and Seward we will pass the great Malaspina Glacier, thousands of square miles in extent, fronting the sea. This ice field lies upon the breasts of the St. Elias Range, and if the weather is clear there will be revealed one of the most magnificent scenes ever looked upon by mortal eyes. Mt. St. Elias, rising apparently from the water's edge, lifts its head 18,026 feet above the waves, and is backed by Mt. Logan and Mt. Irving, each more than 19,000 feet high, with numerous peaks rising above 14,000.

While under the spell of the sight of the apparently illimitable fields of ice and overpowering mountain masses fronting this shore of Alaska, we are reminded that it was in this vicinity, on July 16, 1741, that the Danish navigator, Vitus Bering, in the employ of Peter the Great, first sighted Alaska; and we cannot help but wonder what must have been his speculations as to the character of the land that presented so chilling and forbidding an aspect from this, its southern shore, at that season of the year.

Proceeding to the end of the run at Seward, calling on the way at Valdez, the "Glacier City," perhaps going out to the glacier four miles back, on the moraine of which the town is built, we return from our trip to Alaska impressed by the fact that in daylight and clear weather we were never out of sight of snow-covered mountains.

We have passed en route numerous salmon canneries, which have given us a glimpse of the Alaska fisheries industry; we saw the great Treadwell gold mine at Douglas, opposite Juneau, that turns out $3,000,000 in gold annually; we heard much of the rich placer gold diggings at Nome and in the Fairbanks country, and of the fabulously rich copper mines to which a railroad 200 miles in length is being built at a cost of $20,000,000, and we know of the extensive coal deposits, controversy regarding which is exciting much interest. And learning, too, something of the high cost of food and forage in the interior mining camps, we think of the advantage it would be to these interests if they could be supplemented by a farming industry that would provide a cheaper home supply of food for men and teams; but from what we have seen on a 2,000-mile voyage along the southeastern and southern coast of Alaska, we are ready to admit that farming in Alaska is a very meager possibility.

But perhaps the impression that we got of Alaska from looking at the cold and forbidding face she turned toward us while on the excursion steamer is not wholly warranted. Did you ever know of a person who was regarded by those with whom he came in casual contact as being cold, but who to his intimates was known to be warm hearted and genial? There are many such people, and Alaska is like unto them. She will yet surprise the world in her manifestation of good will toward those who become acquainted with her, and in no way more than in the food she will afford her children from her own bosom.

What has given the world, from Bering's time till now, its most vivid impression of Alaska? The mountain system that fronts the southern shore, the natural point of approach to Alaska.

This system is the continuation and culmination of our Coast Range. Extending northward, the mountains press so close to the sea that our course to Alaska, as we have seen, lies through their very canyons. In Alaskan physical geography, this is the Pacific Mountain System, and comprises a number of more or less distinct ranges. The St. Elias Range, the Chugach and the Kenai Mountains stand close to and follow the great curve of the south Alaska shore from the east westward, while just back of these are the Nutzotin Mountains and the Alaska Range, all forming the arc of a great circle. The ranges merge more or less at the eastern ends, but farther westward they become more distinct one from the other, so much so that the western ends are separated by the Susitna River and Cook Inlet.

At the eastern end of this Pacific Mountain System stands the St. Elias group of peaks reaching altitudes of 19,000 feet. Continuing west, with its sweep to the north then southward, the altitudes are 14,000 to 16,000 feet, until the ultimate height is reached at 20,300 feet in Mt. McKinley.

This Pacific Mountain System lies within a radius of 200 miles of tide water on the south shore of Alaska. It comprises less than one-fifth of the total area of the territory, but it is a dominating fact by virtue of its position and altitude. When the warm and moisture-laden air currents from the Pacific are obstructed in their northern course by this elevated, cold, snow-covered land mass, their moisture is squeezed from them as snow, to be added to the accumulations of ages, and form the Alaskan snow and ice-fields with which we are so familiar. But right here, in the Pacific Mountain System, is practically all of the permanent snow and ice field of Alaska. Remarkable as the statement may appear to be, nevertheless the geographers tell us that the Arctic Mountain System of Alaska, which lies wholly north of the Arctic Circle, has a very limited permanent snow and ice area. This is owing to the much lower altitude of that system—hardly reaching 5,000 feet—and the drier atmosphere.

Lying between the two principal mountain systems of Alaska, the Arctic System, fronting the Arctic Ocean, and the vastly higher and more massive Pacific System that stands guard against the south Alaska shore, is a great interior plateau. Extending from the Alaska-Canadian boundary 600 miles west to the Pacific Ocean, it has a width north and south in the eastern portion of 300 miles, but as it extends towards the ocean, and the Alaska Range of the Pacific Mountain System sweeps southward out on the Alaska Peninsula, it spreads out into the rolling moss-covered tundra that comprises the major portion of the west half of Alaska.

Through this great interior plateau flows the Yukon, one of the great rivers of the world. Its waters are navigable for a thousand miles from its mouth to the Alaska-Canadian boundary and for five hundred miles farther within British territory, and its main affluent the Tanana, gives to this region 300 miles more of inland water way in the heart of Alaska.

In the eastern portion of this interior plateau are the Alaska agricultural possibilities of greatest moment as to extent and availability—a region comprising 100,000 square miles lying between the Alaska-Canadian boundary on the east, the Endicott Range of the Arctic Mountain System to the north, the Pacific Mountain System lying south, and the open tundra country of western Alaska.

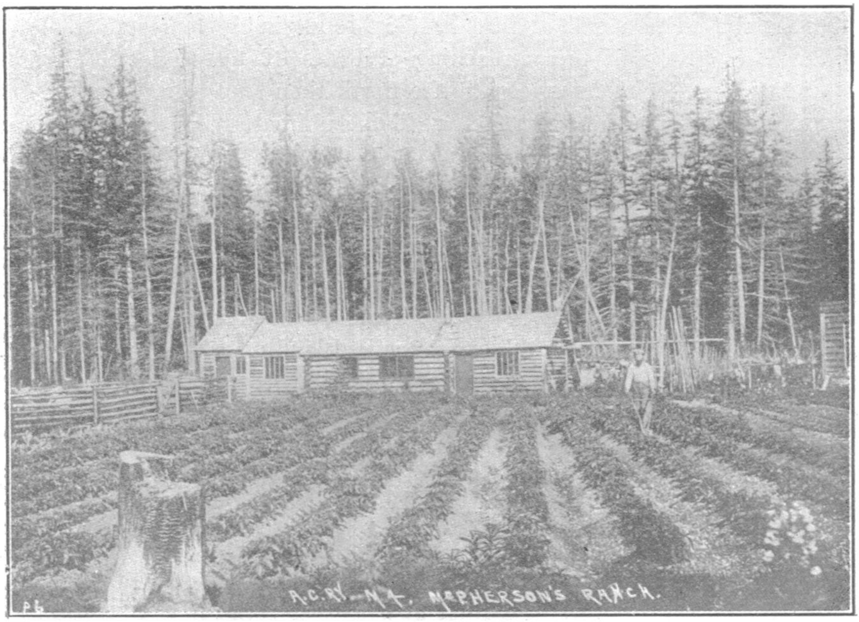

FIG. 3—W. A. McPherson's Ranch, near Seward, Alaska.

This region is not for a moment to be compared as to topography and arable character with our Great Plains or Mississippi Drainage areas; nevertheless, it is beyond question that there are many thousands of acres among its millions that can and will be utilized for tillage, with thousands more available for grazing.

The great variety of vegetation, including wide reaches of luxuriant growths of native grasses, and wild fruits, delicious in quality and abundant in quantity, is Nature's evidence to us that farming in this region is practicable so far as this depends on climate and soil; and the United States agricultural experiment stations at Fairbanks, on the Tanana, and Rampart, on the Yukon (this latter station is within 75 miles of the Arctic Circle) together with numerous individual gardens and ranches of homesteaders, and mission station gardens scattered along the one thousand miles of the Yukon and Tanana Rivers, supplement and conform what nature tells us.

Potatoes, turnips, carrots, cabbages, cauliflower, radishes, lettuce, peas—all the hardy vegetables—cultivated grasses and small grains for stock forage can be raised in abundance, and at the Rampart Experiment Station wheat, oats and barley are being ripened. Some of the hardiest varieties of vegetables are grown in picked localities north of the Arctic Circle, almost to the Arctic Ocean.

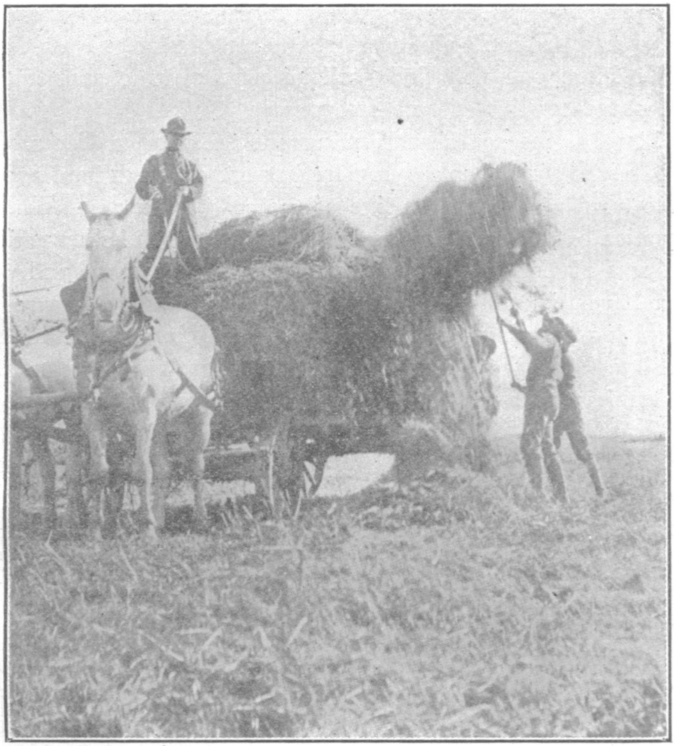

FIG. 4—Wild Grass, Seward, Alaska.

That the Tanana and Upper Yukon Valleys will, at no very distant day, have a farming population outnumbering the present white population, about 35,000, of Alaska, and will be producing from the soil a large part of the food supply of a greatly increased mining population, admits of little doubt. The number of homesteaders in this region, and what they are accomplishing, are sufficient proof of the feasibility of farming in Alaska.

All the possibilities for agricultural development are by no means to be found in the interior plateau.

With the mountains pressing so close to the sea, the percentage of arable land on the south shore is necessarily very small; but along this 3,000—mile shore line there are a good many hundred acres of available tillable land, mostly in small areas. At all of the Seattle steamer ports, from Ketchikan in southeast Alaska to Port Graham on Cook Inlet, one will find gardens with a wide assortment of vegetables and cultivated flowers growing.

At Seward, the southern terminus of the Alaska Central Railway, there are a number of 320-acre homesteads, and land available near the town and along the line of the road for more. When the construction of this road has been pushed around the Turnagain and Knik Arms of Cook Inlet to the Matanuska coal fields, and up the Susitna River, it will make accessible many thousand square miles of promising farming lands. In the Cook Inlet region, including the Susitna Drainage, there is room and a growing demand for a large farming industry as an adjunct to an expanding mining industry. With the opening up of the Matanuska coal fields, this demand will be urgent.

The Copper River and Northwestern Railroad, starting from Cordova as its tidewater terminus, reaches, at the mouth of the Chitina, about one hundred miles from the coast, a considerable body of tillage land.

In the Copper River Drainage above the mouth of the Chitina, are other areas of land on which farming is feasible. In this drainage area is land within 200 miles of the south coast that will be made accessible by the Copper River and Northwestern Railroad, already practically completed to the mouth of the Chitina, sufficient for a farming population equal to one-tenth the total present white population of Alaska. This road will also tap the Bering River coal field, which, together with the copper and other mines, will necessitate a large population for their development, and which will afford a market for products of the farm and garden.

Besides the areas mentioned, where there are agricultural possibilities and the promise of a consuming market near at hand, there are, unquestionably, other large areas of land that might be cultivated, but with no consuming population within reach at present.

Such areas probably exist in the little explored Kuskokwim River Drainage lying to the west of the Alaska Range.

A large stock raising industry is feasible on the grass-covered lands of the Alaska Peninsula and adjacent islands, as is being demonstrated by the Government Experiment Station at Kodiak, while the thousands of square miles of luxuriant native grasses on the main land give promise of an extensive grazing interest—this in addition to a reindeer industry in the exposed and moss-covered region of Western Alaska, which may ultimately number millions of reindeer.

Dependent as it is upon climate, as much as upon soil, let us consider somewhat the suitability of Alaskan climatic conditions for farming.

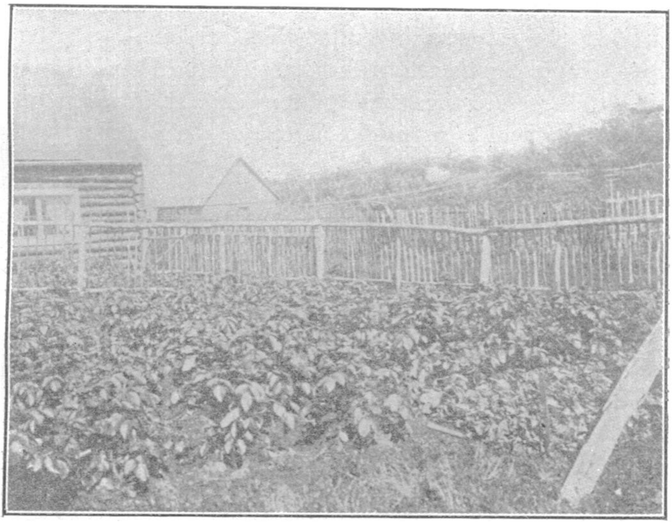

FIG. 5—A Potato Patch, Knik, Alaska.

It should not be forgotten, in this connection, that we are considering a territory that has a latitudinal range of 1,000 miles and an altitudinal range from sea level to 20,300 feet above; that the south, west and north sides of the area are ocean fronts, each differently affected by the contiguous body of water; that the geographical position, topographical features, air currents and ocean currents have very marked climatic effects, resulting in great variation of climate.

The almost continuous range of mountains, that follows so closely the south shore, has a profound effect on the climate, not only of the coast region but the interior, This lofty, snow-capped range receives upon its cold breasts the moisture-laden air currents from the ocean, and compels them to precipitate a large part of the moisture before going on to the interior.

It is rather startling to learn that Sitka, in latitude 57°, has a mean annual temperature not very different from that of Washington, D. C., in latitude 39°; that while the summers of Sitka are cooler than those at Washington, the winters are not so cold. Zero weather is seldom experienced at Sitka and the maximum summer temperature is rarely above 85° F. The average annual precipitation at Sitka is 90 inches. Similar weather conditions prevail throughout southeastern Alaska. Going northward and westward along the coast, both the average temperature and precipitation decrease. Kodiak and Afognak Islands, in Southwestern Alaska, have an even climate as to temperature, but much less rainfall—50 to 60 inches annually—than in Southeastern Alaska. On the Kenai Peninsula, in the Cook Inlet region, the range of temperature is much greater—from a maximum of nearly 90° F. to 40° below zero—while the average annual rainfall may not be over 30 inches.

The season between frosts on the south coast may range from 200 days in Southeastern Alaska to 90 days in the Cook Inlet region.

In the great interior plateau there is, to begin with, a much drier climate—from 10 to 20 inches of annual rainfall—because of the effect of the mountains lying between it and the ocean. Cut off from the temperature-modifying influence of the ocean, the changes from winter to summer, and vice versa, come more quickly than on the coast, and the range of temperatures is much greater. The summers are short but quite warm, the thermometer sometimes registering close to 100° F. The winters are long and severe, with minimum temperatures of 60° to 80° below zero.

The growing season is from 60 to 120 days. This is, apparently, a very short season, yet much longer than it seems, because of the number of hours of daily sunshine during that part of the year in this latitude. Under the effects of the almost continuous sunlight, there is a remarkably rapid and luxuriant growth of vegetation, a fact that must be given much weight in considering the agricultural possibilities of Alaska.

From what has been said in the foregoing it must not be inferred that farming in Alaska is "as easy as falling off a log," and farmers should not "tumble over themselves" to get there. It is to be remembered, in the first place, that, so far as there are means of transportation, the rates, passenger and freight, under existing conditions, are necessarily high. Lack of roads and the nature of the country make summer travel, other than on-foot, almost an impossibility. Where the land is level it is, for the most part, covered with moss, grass, brush, and trees, and is a quagmire from the melted snow and frost of the surface soil.

This limitation on summer travel is indicative of the difficulty that confronts one when attempting to open up a farm. The arable land must, for the most part, be cleared of timber, heavy on the south coast, thin and scrubby in the interior, and stripped of a thick coat of moss which is a very excellent non-conductor of heat. Not until this latter is removed will the heat of the sun penetrate the soil and lower the frost line sufficient for tillage crops.

Prof. C. C. Georgeson, Special Agent in charge of U. S. Agricultural Experiment Stations in Alaska, in a bulletin on Vegetable Growing in Alaska, says:

> "At all places in the interior the ground is frozen to an unknown depth. In the spruce thickets at Fort Yukon (on the Arctic Circle) the writer has found ice immediately under the surface coating of moss in the month of July; but where the surface was exposed to the full effect of the sun, the ground having been cleared and then covered with grass, it has thawed out to a depth of between two and three feet. It is found that when the ground is cleared and the dark, bare earth exposed to the sun, the line of perpetual ice gradually sinks deeper and deeper. At Holy Cross Mission (on the lower Yukon, latitude 62°) in digging a well in such ground to a depth of 24 feet no ice was found. As far as vegetable and grain growing is concerned, the ice is not a drawback after it reaches two or three feet. On the contrary, as it slowly melts from the heat above, it furnishes moisture to the growing plants, and in dry seasons is thus a substitute for irrigation."

The soil in its natural state is, generally speaking, wet, cold and sour. The short season of high temperatures does not give time enough for the melting of the snow and frozen ground, the drying of the latter and the absorption of sufficient heat to cause a rapid decay of vegetable matter. The result is an accumulation of partially decayed vegetation, which has great moisture-holding capacity and low conductibility, and thus the direct climatic effect on the soil is intensified. This wet and cold condition of the soil and consequent slow and imperfect decay of vegetation results in a pronounced acidity.

Clearing the land of the protecting vegetation and thus allowing the sun and air to reach the soil, and providing drainage, will lower the frost line in the soil, remove the excess of moisture, raise the temperature, and correct the acidity. This last can be hastened by the application of lime to the soil.

But all this involves much labor and heavy expense under present conditions in Alaska. As these are now, a man with a family and limited means would not be justified in attempting to go to Alaska to establish a farm home.

Undoubtedly these conditions will speedily change. Train service this season on the Copper River and Northwestern Railroad from Cordova, on the south coast, to the mouth of the Chitina, making accessible tillage and mines in the Copper River Drainage, and with the pushing of the Alaska Central Railroad from Seward into the Susitna Drainage, above Cook Inlet, which will open up another great area in which there are both mining and agricultural opportunities, will mark a new era in Alaskan development. And unquestionably one or both of these roads will be speedily pushed on to the Tanana, when the great interior will be accessible by two steamer routes during the summer—one via Skagway down the Yukon, the other via Nome up the Yukon and Tanana—and by one or more railroads from the coast ports which will afford all-the-year service. When this is accomplished Alaskan development will be rapid and marvelous.

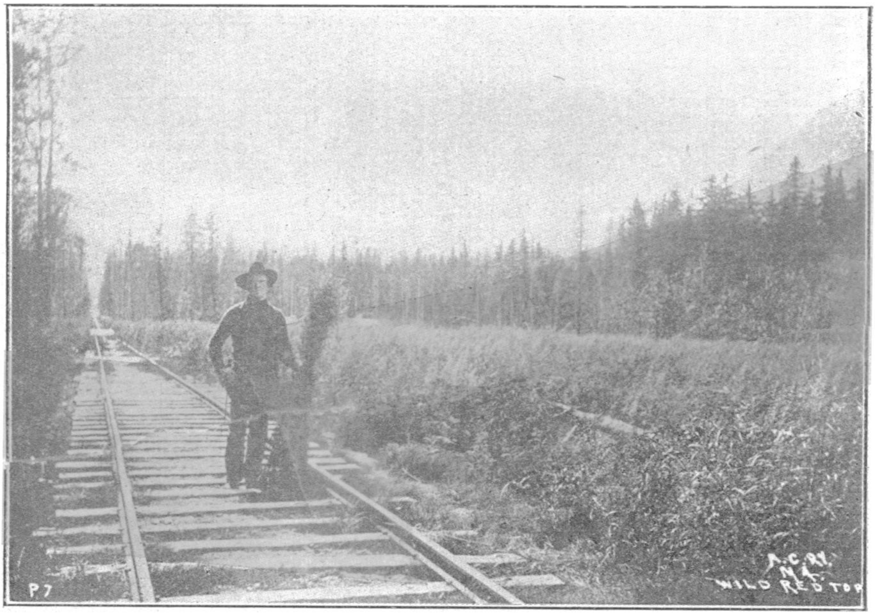

FIG. 6—Wild Red Top Grass, near Seward, Alaska.

The paramount interest of Alaska is mining, and it will probably continue to be. It is this interest that has the attention of the great majority of the 35,000 white residents of Alaska. But, although statistics show values of annual products aggregating millions of dollars, it is the well substantiated belief of experts that Alaska's mineral wealth has only been scratched.

Enormous development of mining awaits two very necessary adjuncts, namely, transportation facilities and a farming industry.

While Alaska is unusually well supplied with navigable streams, on nearly all of which steam or gasoline boats ply during the summer, yet there are vast stretches of back country in which there is untold mineral wealth, but which can only be reached with dog sledges in winter on the snow, or by "mushing" on foot in summer, with one's pack on one's back, accompanied, in rare instances, by a pack horse with a hundred pounds of provisions.

Napoleon said, "An army moves on its belly," meaning of course, that it is helpless without its commissariat. The mining industry of Alaska, and, for that matter, any other industry in any other country, is dependent upon an adequate food supply. When one realizes that, heretofore, the large proportion of the food supplies consumed in Alaska have been shipped from San Francisco to Nome, 2,700 miles, or from Seattle to South Alaska ports, from 1,000 to 2,000 miles distant, then transported by river steamers, winter sledges or pack trains a thousand miles or more to interior points, the freight charges sometimes reaching to 50 cents and more a pound, one can understand why food—potatoes, onions, flour, etc.,—sometimes costs the miner at some of the interior camps $1 a pound, and horse feed quite as much.

My last summer's Alaska trip was by steamer from Seattle to Port Graham, at the mouth of Cook Inlet, then by an Inlet steamer to the mouth of Susitna River, and up the river on a stern-wheeler 75 miles. At Susitna Station I met the manager for the Alaska Commercial Company, who had just returned from Valdez Creek, a new gold placer camp 100 miles farther up the stream and above steamer navigation. He told me that while at the camp he had sold potatoes, flour and other such articles over the counter at $1 per pound, and that hay and grain brought from $800 to $1,000 a ton. And in that region are thousands of acres of land on which native red top grass grows five feet high, and which would make a ton and more of good hay per acre. The land would grow potatoes, turnips and other vegetables in abundance.

A few weeks later, going up the Copper and Chitina Rivers to the Bonanza Copper mine, I found the Kennicott Mines Company feeding their horses "states" alfalfa and timothy hay which the superintendent told me had cost $300 a ton laid down at the mines. This was hauled in from the coast during the winter on snow by horses, and at much less cost than if packed in in the summer time. Probably $285 of the $300 per ton was for transportation from Seattle to destination.

Horse feed—hay and grain—at the road houses costs from 15 to 25 cents a pound.

Under this handicap of high cost of food supplies shipped from the "states," and consequent high wages, it is perfectly apparent that only the few rich strikes of placer gold and high grade ores can be worked, while the many claims of lower values but totaling vastly more wealth, must be unworked, awaiting a cheaper food supply and lower wages. Lines of railroad extending from the south coast into the interior, supplemented by wagon roads that can be used summer and winter, will greatly relieve the situation, but even then, with the base of supplies 1,000 to 2,000 miles away, cost of living and labor will be too high to permit the largest development of Alaska's resources.

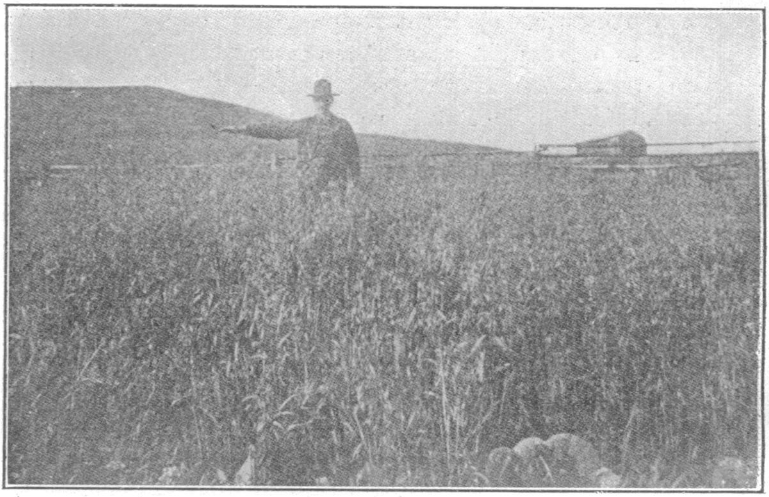

FIG. 7—A Tanana, Alaska, Hay Field.

Finland, Sweden, Norway and Iceland, comprising areas totaling 100,000 square miles less land than Alaska contains, lying between the same parallels of latitude, and having climatic conditions not very different from those of Alaska, but far less rich in mineral and other natural resources, have 12,000,000 people against Alaska's white population of 35,000. Is it unreasonable to expect great development in our northern possession in the next decade? Transportation must lead the way to this land of wealth, and agriculture must sustain the workers, if there is to be full fruition.

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# ARGENTINE PATAGONIA

## A LAND OF THE FUTURE

BY

MARRION WILCOX

Argentine Patagonia is divided into five parts, namely, the Territories of Rio Negro, Neuquen, Chubut, Santa Cruz, and Tierra del Fuego, whose combined areas (about 775,000 square kilometers, or 302,250 square miles) exceed the total area of the Republic of Chile (the latter being about 756,990 square kilometers) and constitute between one-third and one-fourth of the entire area of the Republic of Argentina, or nearly one-twentieth of the continent of South America. The comparatively small part of this region which is included in the Chilean Territory of Magallanes was commented upon in the *Bulletin* for November.

In view of the circumstance that its climate, ranging from temperate to cold (since it extends, roughly speaking, between lat. 40° S. and lat. 55° S.) favors the development of vigorous communities, we note with special interest any record of Patagonia's agricultural achievements which may tend to demonstrate the fertility of the soil, accessibility of the little-known interior districts, facilities for irrigation, etc. The question whether this distinctly habitable one-twentieth of South America possesses such elements of substantial prosperity has entered a new phase quite recently; and it is obviously a very large question. An optimistic view of that question is supplied by Guillermo L. Friedrichs, of Córdoba, Argentina, who has contributed a paper entitled "Die Wirtschaftliche Erschliessung Patagoniens" (*Der Tropenpflanzer,* May, 1910).

The studies of Mr. Friedrichs bring to notice again the race between England and Spain for the control of this region. In 1774, the Jesuit Thomas Falkner, having penetrated to the heart of the country, found the interior so unexpectedly desirable that he urged